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Interparental and child-parent agreement on childhood psychopathology as assessed by the Personality Inventory for Children, Second Edition (PIC/2) and the Personality Inventory for Youth (PIY).

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Interparental and Child-Parent Agreement on Childhood Psychopathology as Assessed by the Personality Inventory for Children, Second Edition (PIC/2) and the Personality Inventory for Youth (PIY)

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Abstract

Examined interparental and child-parent agreement on externalizing and internalizing behaviors as assessed by the Personality Inventory for Children, Second Edition (PIC/2) and the Personality Inventory for Youth (PIY). Sixty families of non-clinical children between the ages of 9 and 16 years participated; each parent completing the PIC/2 while their child completed the PIY. Informant response patterns were compared for both the factor scales and a subset of comparable clinical scales (including validity, general screening, externalizing and internalizing indices). The levels of interparental and child-parent agreement for the various scales were examined. The existence of significant differences in the level of psychopathology endorsed by parents was not supported by the data. Correlations of agreement between parental T-Scores averaged .77 for the four factor scales and .73 for the subset of six clinical scales. Interparental agreement correlations were also found to be higher for indices measuring externalizing type behaviors than for indices measuring internalizing behaviors. Correlations of agreement between parent and child T-Scores were much lower than interparental agreement correlations, averaging .39 for mother-child dyads and .41 for father-child dyads. While mother-child and father-child agreement on some indices measuring externalizing behavior was greater than on internalizing measures, this finding was inconsistent. Findings provide preliminary evidence for the reliability and

validity of these measures and support their application for child behavioral assessment. Implications for clinical usage and directions for future research are discussed.

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Chapter I

Introduction

Many instruments used in child personality assessment are based on the subjective reports of parents and teachers. Since young children lack the requisite reading and conceptual skills necessary to complete relatively simple questionnaires (Lachar, Butkus, & Hryhorczuk, 1978), self-report measures have typically been limited to older children who are more adept at reading and comprehension. In recent years there has been a trend in child assessment which recognizes children as valuable informants (Edelbrock, Costello, Dulcan, Conover, & Kala, 1986). It is suggested that the best and most comprehensive picture of the child's behavioral functioning can be obtained if, and only if, all primary sources of information are pooled, including both parents, the child, and other significant persons, such as teachers (McConaughy, 1993; Gresham, 1985).

Due to the routine usage of behavior rating scales in both clinical and educational settings for the purpose of screening, referral, and identification (Kline, Lachar, & Gdowski, 1992; Hutton, Dubes, & Muir, 1992; McGinnis, Kiraly, & Smith, 1984), the reliability and validity of these behavioral measures is a major concern. Although emphasis is currently placed on the use of multiple informants (e.g., Achenbach, 1985), informants often disagree about the presence, severity and duration of symptoms (Edelbrock et al., 1986).

Reliability estimates for behavior rating instruments have primarily reported comparisons of interparental agreement and child-parent agreement (Hulbert, Gdowski, & Lachar, 1986). The literature suggests that these agreement estimates generally cover a broad range, from very low to very high (e.g., Achenbach, McConaughy & Howell, 1987; Hulbert, 1984; Herjanic & Reich, 1982). However, many studies fail to sufficiently explain the nature of agreement because of their sole reliance on the correlation statistic. As a result, it has been suggested that several indices of agreement be calculated and compared (Hulbert et al., 1986).

In the literature, many different sources have been suggested as possible causes of interparental and child-parent disagreement, including time spent with the child (e.g., Fitzgerald, Zucker, Maguin, & Reider, 1994), the gender of both the child and the parents (e.g., Jensen, Traylor, Xenakis, & Davis, 1988; Tarullo, Richardson, Radke-Yarrow, & Martinez, 1995), familial circumstances (such as social economic status, and family stressors) (e.g., Jensen, Xenakis, Davis, & Degroot, 1988), and the type of symptomatology being rated (e.g., Beitchman & Corradini, 1988).

The Personality Inventory for Children (PIC; Wirt, Lachar, Klinedinst, & Seat, 1977) is a well established, multi-dimensional child behavior checklist which provides the clinician with a profile for the child on a variety of scales. A review of recent literature on the PIC provides much support for both reliability and validity (e.g., Kline, Lachar, & Gdowski,

1988; Lachar, Gdowski & Snyder, 1984). Interparental agreement has also been found to be relatively high on the PIC (e.g., Hulbert et al., 1986). As well, research conducted on the PIC has indicated that it is a relatively unbiased assessment tool. Ratings of parents, teachers, and clinicians were found to be virtually free from bias due to gender, age, or ethnicity (Kline & Lachar, 1992; Kline, Lachar, & Sprague, 1985). The PIC is currently under revision (Personality Inventory For Children, Second Edition, PIC/2; Wirt, Lachar, Seat, & Broen, 1994) and a child report form (Personality Inventory for Youth, PIY; Lachar & Gruber, 1995) has recently been developed. Since these instruments are new, validation of both is necessary.

The present study examined interparental agreement on the Personality Inventory for Children, Second Edition (PIC/2) through both correlation and multivariate analysis of variance. Factors that may contribute to disagreements were also considered. Child-parent agreement was measured through a correlation between the parental scores on the PIC/2 and the corresponding child scores on the Personality Inventory for Youth (PIY). Agreement between the PIC/2 and the PIY has not been examined beyond the PIY standardization sample.

In order to critically examine interparental and child-parent agreement, it is first necessary to discuss some of the research that has investigated interparental and child-parent agreement. In addition to a consideration of this research, it is also necessary to determine which

conclusions may be drawn with respect to the reliability of parental and child protocols, and possible factors that may cause discrepancies between the reports of these sources. Next, research that has been conducted on the instruments used in this study, the Personality Inventory for Children (PIC/2) and the Personality Inventory for Youth (PIY), will be reviewed. Topics for consideration include reliability, validity, revisions, and future focus. The level of agreement between parental PIC and child PIY protocols will also be examined. Finally, the purpose and hypotheses of the present study will be presented.

Interparental Agreement

One important type of reliability measure for informant-report scales of child behavior is the assessment of interparental agreement when endorsing childhood behavior problems. Interparental agreement estimates become especially important to the clinician when trying to determine whether multiple informants are necessary to obtain a clear and accurate clinical representation of the child's behavior. For example, if interparental agreement is shown to be high for a particular instrument, then it could be argued that it is only necessary to obtain one parent's profile because the other parent's profile would provide mostly redundant information. However, if the interparental agreement of that instrument is found to be low, then obtaining multiple perspectives of the behavior patterns may provide a much more complete representation of the child's problems.

Interparental agreement literature suggests that coefficients of interparental agreement cover a very broad range (e.g., Hulbert, 1984). Although there seems to be a trend toward a large degree of variation in interparental agreement correlations, most coefficients of agreement are moderate to high. In a meta-analytic analysis of cross-informant correlations Achenbach, et al. (1987) examined 119 studies reporting correlations between various informants, including parents, children, teachers, observers, peers, and mental health workers. Of these 119 studies, 22 reported interparental agreement coefficients. Analysis of the interparental studies revealed correlations ranging from .22 to .75, with a mean interparental correlation of .59.

Closer examination of the parental congruence data provided in Achenbach et al. (1987), revealed several trends. First, many of the studies that reported low correlations ($\underline{r} < .50$) were based upon measures of temperament, rather than behavior rating scales. Also, most of the studies reporting low correlations were conducted on preschool aged children. Of particular interest to the present study are congruence estimates based on behavior rating scale descriptions of children at least 9 years old. Achenbach et al. (1987) included 11 studies meeting the criteria with reported interparental agreement correlations ranging from .53 to .75.

Results similar to those reported in Achenbach et al. (1987) were also reported in more recent research. For example, a study which examined

agreement between parents when completing the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) indicated that parental perceptions were significantly correlated (Webster-Stratton, 1988). Another study investigated the degree of correspondence between mothers', fathers', and their children's ratings of present symptomatology (Thurber & Osborn, 1993). The 103 children whose families participated in the study were patients in a private adolescent psychiatric hospital, and ranged in age from 11 to 17 years old. The parents independently completed the CBCL, while the children completed the Youth Self Report (YSR; Achenbach & Edelbrock, 1987), a modified self-report form of the CBCL. Analysis of the correlation between parent's scores on the CBCL indicated relatively high agreement for boys (r = .67), whereas agreement was found to be moderate for girls (r = .53).

Although most interparental agreement research has focussed upon correlations between mother's and father's protocols, other research has examined parental reports for differences. In one case, the parents of 96 families with a male child between the age of 10 and 18 years independently completed the Behavior Problem Checklist (BPC; Quay & Peterson, 1979) to determine the correspondence between parental reports (Jacob, Grounds, & Haley, 1982). Scores were analyzed by means of correlation, percent agreement, and t-test. Results indicated that there was a significant positive correlation (r = .63) between the reports of mothers

and fathers, suggesting a relatively high degree of interparental agreement. Percentage agreement ratings, which show the percent of the total observations on which the parents agree, were also found to be relatively high - interparental concordance being measured at 72%. A t-test for differences in the samples, however, revealed significant differences between the two sets of scores ($p < .05$), with fathers endorsing more items than mothers.

In another study, the degree of interparental agreement on the CBCL based on item analysis was examined (Christensen, Margolin, & Sullaway, 1992). A sample of 137 intact families were recruited through clinical referrals and were thoroughly screened for group placement. Mothers and fathers completed the forms independently and the data were analyzed by correlation and analysis of variance of the discrepancy index. The results indicated that there were significant differences in the endorsement of items between the mothers and the fathers, the mothers being more likely to endorse items ($p < .01$). Similar results were also reported in a study of interparental agreement on the CBCL conducted on 124 intact families with children from ages 6 to 11. Results indicated that the parental reports were significantly different, the differences between mean parental scores being about 0.7 standard deviations (Jensen, Xenakis et al., 1988).

However, studies reporting differences between parental reports may be misleading. While this body of research clearly supports the finding that

mother's and father's reports of child behavior are significantly different, it is unclear as to whether parental reports are also significantly related due to a lack of reported correlational analyses. While the parental reports may be different, it is also possible that they may be highly correlated, as was the case in the study conducted by Jacob et al. (1982).

Overall analysis of recent interparental agreement research (e.g., Achenbach, et al., 1987; Hulbert, 1984; Jensen, Xenakis et al., 1988) suggests that discrepancies between parental reports often occur. Coefficients of parental concordance cover a wide range, with most correlations being moderate to high. While differences have been found between parental reports in some research, correlations are often not reported, making it unclear as to whether the reports are significantly related. Also, many of the interparental agreement studies do not attempt to explain why these differences may be occurring. Several factors, such as gender and nature of the problem behavior being reported, may significantly affect interparental agreement. Each of these factors will be discussed in more detail in the next section.

Factors Affecting Agreement

Many factors have been implicated in the search to discover reasons for the notable variation in interparental agreement coefficients. The research to date suggests that parent and child gender, and type of behavior rated have the greatest impact on ratings (e.g., Edelbrock et al., 1986;

Jensen, Xenakis et al., 1988; Thurber & Osborn, 1993). The impact of these factors on agreement will be examined individually below.

Parental gender.

One of the strongest factors affecting the concordance of reports is the gender of the parents. Analyses of interparental agreement consistently show differences in the way mothers and fathers report children's symptoms or behaviors, even when estimations of interparental agreement are high (Eisenstadt, McElreath, Eyberg, & McNeil, 1994; Jensen, Xenakis et al., 1988; Jacob et al., 1982). Research has also shown that in most cases of disagreement between parents, the mother consistently rates her child's behavior as more problematic. For example, one study reported that on the Eyberg Child Behavior Inventory (ECBI; Eyberg, 1974), mothers rated their children's disruptive behavior as more frequent and more problematic than did fathers (Eisenstadt et al., 1994). These results were corroborated by other studies which also indicated a tendency for mothers to rate their children's behavior as more problematic (Thurber & Osborn, 1993; Christensen et al., 1992; Jensen, Traylor et al., 1988). It has been hypothesized that the rating of behavior as more problematic by mothers is possibly due to the mother's greater involvement with, and sensitivity to the child, in comparison to the father. However, it has also been suggested that the rating of behavior as less problematic by fathers may be due to increased thresholds on the part of the father (Jensen, Traylor et al., 1988),

or actual situation-specific differences in the child's behavior due to the presence of the father (Wenar, 1994).

Child gender.

Research conducted on child behavior consistently supports the finding that boys and girls differ significantly in a number of different behavioral areas. For example, one study reported that although boys and girls did not differ in the total number of symptoms endorsed by parents, the pattern of symptoms endorsed was significantly different for boys and girls (Jensen, Xenakis et al., 1988). Evidence of such sex differences in psychological functioning has been repeatedly documented in the psychological literature (see Rothbart & Maccoby, 1966). While physiological factors likely influence gender specific behavior patterns, some behaviors seem to be based in part on sex stereotypes learned early in life which may contribute the development of different preferences, attitudes, and values by boys and girls (Huston, 1985). In fact, differences have been reported to exist for a wide variety of behaviors, including play activity and games (Humphreys & Smith, 1987; Maccoby, 1990), aggression (Fagot & Hagan, 1985; Maccoby & Jacklin, 1980), verbal expression (Maccoby & Jacklin, 1984), and communication style (Maltz & Borker, 1983).

Although differences are evident in the behavior of boys and girls, research suggests that parental tolerance levels, perceptions of the child's behavior, and expectations regarding their child's competency in various

activities are different dependent upon child gender and may affect parental reports of child behavior (Eccles, Jacobs, & Harold, 1990; Speer, 1971). Thus, each parent has implicit definitions and biases regarding which types of behavior are acceptable and which types are not, resulting in possible areas for disagreement (Wenar, 1994). For example, fathers have been found to be less tolerant of deviations from sex role stereotypes than mothers (Block, 1983).

Gender interaction.

While evidence derived from research on child behavior seems to indicate that both parental gender and child gender play a role in parental perceptions (and subsequently reports) of child behavior, research also suggests that a gender interaction exists which may impact upon interparental agreement. There is considerable evidence that child gender is more influential in father-child interactions than in mother child interactions (Harris & Liebert, 1991; Huston, 1983; Langlois & Downs, 1980; Tauber, 1979). Fathers are more likely than mothers to play differently with their sons and daughters, roughhousing with their sons while being gentle with their daughters (Kruper & Uzgiris, 1987). In fact, quantitative data have been reported in the literature which indicate that significant differences exist in the interaction styles of father-son and father-daughter dyads (Snow, Jacklin, & Maccoby, 1983).

Differences in parental behavior with sons and daughters have also been reported to exist in sex role stereotyping. For example, fathers have been found to be more likely to encourage stereotypical sex-appropriate play dependent upon the child's sex (Jacklin, DiPietro, & Maccoby, 1984). Fathers have also been found to become more distressed and display more negative reactions than mothers when their sons deviate from sex roles (Fagot, 1978; Fling & Manosevitz, 1972). In addition, parents of both sexes have been found to more frequently encourage conformity to appropriate sex roles in their same sex children (Fling & Manosevitz, 1972).

Finally, the literature reports that fathers exhibit different levels of involvement with their sons and daughters. Research suggests that while fathers are very involved in the socialization of their sons (Lamb, 1986), they are less involved with their daughters (Grossman, Pollack, & Golding, 1988). Fathers are more demanding of their sons, punishing them more often than they do their daughters (Baumrind & Black, 1967; Lambert, Yackley, & Hein, 1971; Siegelman, 1965), and are more accepting of dependent behavior in their daughters (Fagot, 1978; Hatfield, Fergusun, & Alpert, 1967; Lambert et al., 1971; Rothbart & Maccoby, 1966).

Research has also been conducted on parents to explore these gender interaction effects. In one such study, parental permissiveness was measured for a child's dependency on the parent and aggression toward the parent by rating the parent's reaction to a taped ambiguous voice which was

labelled as either male or female. Results indicated that parents were more permissive of the behaviors in an opposite gender child (Rothbart & Maccoby, 1966). Similarly, a study which observed the interactions of 14 families discovered that fathers had more positive interactions with their sons, while mothers had an approximately equal number of positive interactions with both children (Margolin & Patterson, 1975). When analyzed for the presence of a gender interaction, both of these studies reported significant interaction effects. As a result, gender interaction likely affects parental perceptions of what will be considered appropriate behavior, and being different dependent upon the gender of the parent and the gender of the child, becomes a further source for discrepancies when comparing behavioral reports.

Although the literature seems to support the existence of gender-based differences in both parental perceptions of child behavior and their subsequent reactions to children, the applicability of this finding to parental reports of child behavior on rating scales is questionable. For example, one study conducted an analysis of variance on 137 pairs of parental CBCL protocols and discovered differences between maternal and paternal reports. These differences were attributed to a significant main effect for parental gender, with mothers reporting more pathology than did fathers. Child gender and gender interaction effects were not statistically significant (Christensen et al., 1992). This evidence suggests that both child gender

and gender interaction may not impact upon parental reports of child behavior in some circumstances. However, without further comprehensive examination of this area, it is unclear whether this finding is generalizable to all behavior rating scales, or unique to that particular study.

Symptomatology.

Another influential factor affecting informant agreement is the nature of the symptomatology. Externalizing pathology is characterized by undercontrolled behavioral excesses and deficits, such as in hyperactivity and conduct problems, whereas internalizing symptoms include overcontrolled problems for which overt evidence may not be present, such as in anxiety, obsessive thinking, psychosis, and affective disturbances (Thurber & Osborn, 1993). Correlational analysis of the CBCL and YSR reports of 171 boys and their parents indicated that agreement was higher on externalizing symptoms (r = .268) than on internalizing symptoms (r = .172) (Lee, Elliott, & Barbour, 1994). Similarly, a study examining parental agreement on the CBCL with a sample of 137 families reported that kappas for externalizing items were higher than kappas for internalizing items (Christensen et al., 1992). Consistent with these findings, most research conducted on interparental agreement suggests that externalizing symptoms usually result in higher levels of concordance than do internalizing symptoms (Rey, Schrader, & Morris-Yates, 1992; Edelbrock et al., 1986; Jacob et al., 1982; Lyon & Plomin, 1981). As well, it seems that parents

tend to report higher levels of behavioral and conduct symptoms, whereas their children reported more subjective symptoms (Herjanic & Reich, 1982; Hodges, Garden, & Lennon, 1990). Externalizing symptoms tend to be more readily observable, thus they may be more apparent to parents. Internalizing symptoms, on the other hand, are somewhat private and subjectively experienced. As a result, parents may not be as aware of these problems, and the children may provide more accurate accounts (Christensen et al., 1992; Rey et al., 1992; Hodges et al., 1990; Edelbrock et al., 1986).

Overall, research suggests that gender and symptomatology affect agreement correlations. Discrepancies between parental reports of child behavior are frequently reported in the literature (e.g., Eisenstadt et al., 1994). In most cases, these discrepancies have been attributed to the fact that mothers rated their children's behavior as more problematic (e.g., Thurber & Osborn, 1993). Parental tolerance levels, perceptions, and expectations based upon the child's gender (or possibly gender interaction) have also been implicated as sources of disagreement (e.g., Eccles, Jacobs, & Harold, 1990; Margolin & Patterson, 1975; Rothbart & Maccoby, 1966). Finally, discrepancies in reports of children's behavior also occur as a result of the symptoms reported. Agreement is generally found to be higher for externalizing symptoms than for internalizing symptoms (e.g., Rey et al., 1992). As well, parents tend to report more externalizing symptoms,

whereas children report more internalizing behavior (e.g., Hodges et al., 1990). The literature clearly suggests that factors, such as parent gender, child gender, gender interactions, and type of symptomatology, may affect endorsement - and thus affect agreement.

Child-Parent Agreement

Child-Parent agreement is an issue of importance since, like interparental agreement, it provides an estimate of discrepancies between what the parent and the child may consider problematic. Also, like the interparental agreement studies, child-parent concordance rate research has turned up a vast range of coefficients. However, unlike the interparental agreement research, estimates of child-parent agreement have generally been low. Achenbach et al. (1987), in their meta-analysis of cross-informant correlation research, examined the literature on child-parent agreement. Of the 119 studies examined, 11 reported child-parent correlations. Coefficients of agreement between children and their parents ranged from .07 to .40, with a mean correlation of .25.

Further examination of the studies examined in Achenbach et al. (1987) again revealed several trends. Extremely low correlations ($\underline{r} < .25$) were obtained primarily from studies of depressive symptomatology in inpatient children. Low correlations were also reported in a study of children with psychiatrically ill parents. The remaining 6 studies, which are more relevant to the present study (i.e., based upon behavior rating

scales with children 9 years of age or older), report higher levels of agreement (correlations ranging from .27 to .40).

Similar findings were also reported in a study measuring child-parent agreement on the CBCL, which calculated the correspondence between children's YSR scores with each of their parent's CBCL scores (Thurber & Osborn, 1993). Results indicated that both the mothers and the fathers rated their children as having significantly more psychopathology than did the children themselves. Correlations between the parent and child scores were reported to be lower than interparental agreement coefficients: $\underline{r}$ = .30 for mother-son, $\underline{r}$ = .14 for father-son, $\underline{r}$ = .22 for mother-daughter, and $\underline{r}$ = .22 for father-daughter dyads.

Another study comparing parental CBCL reports to the YSR reports of their children reported comparable results (Rey et al., 1992). The 1299 children were referrals to a psychiatric facility over a three year period, and ranged in age from 12 to 16 years. The CBCL was filled out by either or both parents together, depending on their preference. Agreement between the CBCL and the YSR was completed at the item level for questions common to both measures. The average correlation between the parent and the child reports was .28, with a range of .08 to .72, again supporting the typical finding that child-parent agreement is somewhat lower than interparental agreement.

Another study, examining the relationship between parental and child reports using the child and parent forms of the Child Assessment Schedule (CAS; Hodges, Kline, Stern, Cytryn, & McKnew, 1982), reported somewhat higher concordance rates (Hodges et al., 1990). The reports were given by 48 child admissions to an inpatient psychiatric unit, who were between the ages of 6 and 12 years, and their mothers. Correlations indicating statistically significant agreement between mother-child reports were found for four of seven diagnostic areas (including Conduct disorder, Attention Deficit disorder, Major Depressive disorder, and Dysthymia) and five of nine content areas (including Family, Expression of anger, Friends, Mood, and School). Overall, child-parent agreement for the instrument was relatively high (r =.63).

While most studies have concentrated on correlational research, child-parent reports have also been analyzed for differences. A study conducted on child-parent agreement in young offender and non-clinical males compared the maternal and youth ratings on the CBCL and YSR (Butler, MacKay, & Dickens, 1995). The protocols were obtained from 50 young offenders and 51 non-clinical males between the ages of 12 and 16 years, and their mothers. Significant differences were found between all maternal-young offender ratings for internalizing and externalizing scales with the young offenders admitting to less psychopathology than was attributed to them by their mothers. However, maternal-youth protocols from the control

group did not significantly differ. Lack of variance in the protocols of the control sample may have contributed to the apparent high level of child-parent agreement. The pattern of findings for the young offender sample suggests that biased reporting (i.e., denial of pathology by young offenders in the process of adjudication) may have lowered the child-parent agreement in that sample. As was the case in the interparental agreement research reporting differences, no correlation statistics were reported in this study. Thus, while significant differences were reported, it is unclear as to whether the reports are significantly related.

As was seen in the studies assessing interparental agreement, child-parent agreement also covers a wide range of agreement coefficients (e.g., Achenbach et al., 1987) and, in some cases, exhibit significant differences between child and parent protocols (e.g., Butler et al., 1995). However, due to a lack of reported correlations, the meaning of these differences is unclear. Unlike interparental agreement correlations, child-parent agreement on behavior rating scales has been generally found to be low, although some instruments have been found to exhibit moderate levels of agreement (e.g., Hodges et al., 1990). However, this lower level of agreement is consistent with the literature, which supports the premise that agreement between the perceptions of the two parents is generally much greater than that between either parent and the child (Achenbach et al., 1987; Galejs, Pease & Wolins, 1984). Finally, research suggests that the

factors that have been implicated as affecting agreement coefficients in the interparental agreement research may also be responsible for the range of agreement correlations that have been discovered in the literature on child-parent agreement.

One major problem that is present in many of the studies on interparental and child-parent agreement is the fact that the instruments used often do not include any measures of response set. The response set for an individual may be altered by several factors, including biases, defensiveness, and even circumstances surrounding assessment. In turn, the outcome of the assessment may also be altered. For example, the significant differences found between the reports of young offenders and their mothers (Butler et al., 1995) may be the result of the child's defensive reporting style, rather than actual differences in behavior. Thus, a measure of response set provides an opportunity to determine both if an individual's response set is affecting symptom endorsement, and if so, to what degree.

Personality Inventory for Children (PIC)

History and revisions.

The Personality Inventory for Children (PIC; Wirt et al., 1977) is a multidimensional objective personality inventory which assesses child and adolescent emotional, conduct and cognitive status as reported by the parent. While research has shown that the parent may not be the best source of information regarding the child's inner experience, they can

certainly provide a great deal of information about many of the problems that the children are exhibiting.

The original format of the PIC consisted of a 600 item questionnaire which could be completed by the informant, usually the mother, in 60 to 90 minutes. The questions consisted of true/false responses, which could be scored and transformed into clinical profiles. Norms were provided in the PIC manual (Wirt et al., 1977) for children and adolescents aged 3 to 16 years, based on a sample of 2600 normal children.

More recently, Lachar (1982) revised the PIC format such that the original clinical scales could be obtained from the first 420 items. As well, Lachar constructed a short form of the PIC, allowing the clinical scales to be obtained from the first 280 items. These shortened versions of the PIC were generally shown to be both reliable and valid (Lachar, 1982), although underrating and overrating of specific scales may have occurred due to the effects of extrapolation (Forbes, 1986).

Reliability and validity.

Since its origin and subsequent alterations, the validity of the PIC has been extensively researched. In one of the first studies conducted on the PIC after its publication, Lachar et al. (1978) correlated the clinical profile scales with chart information for 79 psychiatric outpatient children. They discovered that the data derived from the outpatient evaluations, on the average, correlated with 12 of the 16 profile scales. This high level of

agreement between the PIC scales and the clinician's evaluation of mother-child interaction provided support for the construct validity of the PIC.

The validity of the PIC was also reported in a study of 839 children and adolescents (Kline et al., 1988). In this study the PIC profiles, which were completed by the children's mothers, were compared to DSM-III diagnoses, teacher, and clinician ratings. Results indicated that PIC scores were not randomly distributed across diagnostic groups. A positive relationship was reported between PIC scales and the DSM-III diagnosis, suggesting that there was a degree of convergent validity. Relatively high proportions of several DSM-III categorized samples obtained elevated scores on associated PIC scales. Also, high correlations were found between PIC profiles, teacher and clinician ratings, suggesting high concurrent validity.

Incremental and convergent validity have been demonstrated for the PIC. Kline et al. (1992) compared DSM-III diagnoses and PIC profiles for 573 children in a psychiatric hospital. This comparison indicated high convergence between the PIC profiles and the DSM-III diagnoses, especially when the diagnosis included cognitive or developmental deficits. Conduct and emotional problems reflected somewhat lower correspondence with their respective PIC profiles. Incremental validity, as measured by multiple regression analyses, was also demonstrated. PIC profiles significantly increased predictive ability for all clinician ratings and 40 percent of teacher

ratings. As a result, DSM-III diagnoses and PIC profiles were able to predict all seven clinician ratings and four of five teacher ratings.

The external validity of the PIC was also analyzed in a study by Lachar et al. (1984). The home, school, and clinic ratings of 691 child and adolescent subjects from a clinical setting were correlated with their PIC profiles. The results of the correlations indicated significant evidence of convergent as well as discriminant validity with respect to the individual scales of the PIC.

Further evidence of the convergent and discriminant validity of the PIC was reported by Keenan and Lachar (1988). Profiles of 120 children were correlated with several measures of cognitive and language abilities, including the McCarthy General Cognitive Index (GCI; McCarthy, 1972), the Peabody Picture Vocabulary Test (PPVT; Dunn, 1959), and either the Reynell Developmental Language Test or the Utah Test of Language Development. Results indicated that there were significant differences between the PIC profiles of the clinical and non-clinical groups, as was expected. Significant correlations (ranging from $\underline{r} = .44$ to $\underline{r} = .71$, with most correlations in the moderate to high range) were also obtained between the PIC cognitive triad and the measures of cognitive and language ability, further supporting it's external validity.

Evidence for the discriminant validity of the PIC was also obtained in a study of different clinical populations. Kline, Maltz, Lachar, Spector, and

Fischhoff (1987) obtained the profiles of 99 subjects who met the DSM-III diagnostic criteria for either infantile autism, pervasive development disorder, or mental retardation. A comparison of the PIC scales revealed significant differences between the three groups of subjects. As well, a discriminant function analysis of the profiles indicated that the PIC was able to provide correct classification for over 90 percent of the subjects, thus indicating a high degree of success in differentiation of these clinical disorders.

In the empirical testing of personality assessment tools, such as the PIC, validity of the instrument is a crucial issue since it determines both if the instrument measures what it was designed to measure as well as how efficacious it is at doing so. The other major issue of relevance to instrument testing is the reliability of the measure. Many studies have also been conducted on the reliability of the PIC as an assessment tool. Most of this work has been done on the comparison of different informants who may complete the child's PIC profile, and the biases that may be effecting item endorsement.

Lachar and Gdowski (1979) originally reported that in a large clinical sample mean PIC scores were affected by demographic variables, such as age, gender, and so on. The age and gender differences that were reported, however, were as would be expected considering the age range of the PIC

and the types of problems that it assesses. Racial differences were also indicated, although the data revealed that the differences were inconsistent.

In a study by Kline et al. (1985) the PIC scales were evaluated to determine whether they were affected by variables such as age, gender or ethnicity in their relationship with tests measuring functioning and achievement. More specifically, the study was conducted to determine if the scales of the PIC could be used to predict with equal efficacy across several demographic groups. The PIC profiles completed by the mothers of 329 children were compared to their performance on tests of cognitive functioning and academic achievement, including the Wechsler Intelligence Scale for Children, Revised edition (WISC-R; Wechsler, 1974), the Peabody Individual Achievement Test (PIAT; Dunn & Markwardt, 1970), and the PPVT. Data analysis did not reveal evidence of effects due to cultural background, age, or gender which would substantiate the existence of demographic bias.

In another study by Kline and Lachar (1992), the PIC profiles generated from the mothers of 1333 children were analyzed along with teacher and clinician ratings. Again the demographic variables of the child were assessed for a relationship to the measures. Results indicated no effects of child gender, ethnicity, or pattern interaction on the scores, suggesting that the PIC is potentially unbiased with respect to ethnicity or gender. Age related differences were found, as would be expected, but are

of little significance because of the separate age norms in the interpretation of the test. Calculations and analysis also provided evidence of high internal consistency and high test- retest reliability.

Personalty Inventory for Youth (PIY).

After extensive research and constant revisions, a further adaptation of the PIC resulted in the Personality Inventory for Youth (PIY; Lachar & Gruber, 1995). The PIY is a multidimensional, objective, self-report version of the PIC for use with children between the ages of 9 and 18 years. As studies have shown, child reports of subjective symptoms can be invaluable since the parents may not be as aware of these problems. In order to have a compatible companion to the PIC that would allow the clinician to obtain information from multiple sources, including the child as well as parents and teachers, the questions from the PIC were altered to a low to mid third grade reading level and stated in the first-person. These translated true/false questions provide a profile of validity and clinical scales, which were based on a representative normative sample of 2327 children aged 9 to 18 years. Additional norms for clinical populations were also collected, based on a sample of 1178 clinically referred children.

Prior to the initial release of the test, extensive research was conducted to determine the reliability and validity of the PIY as a clinical instrument. The results of the validation research, as reported in the PIY technical manual (Lachar & Gruber, 1995), indicate that the PIY is both a

reliable and valid instrument. Content validity was demonstrated through high correlations between the items on the PIY and the PIC-R, and satisfactory internal consistency. Criterion validity was demonstrated through correlations with a variety of clinical instruments including the Minnesota Multiphasic Personality Inventory (MMPI; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) and the PIC-R, and medical record symptom dimensions (correlations ranged from $\underline{r}$ = .21 to $\underline{r}$ = .70, with most correlations in the moderate to high range). Finally, construct validity was demonstrated through gender and ethnic comparisons.

Personality Inventory for Children, Second Edition (PIC/2).

The PIC/2 (Wirt, et al., 1994) will be the latest revision of the series. This research edition of the PIC is used in the present study with the permission of the test authors. Research conducted since the last revision of the PIC has revealed some ways in which improvements could be made, thereby making the PIC a more robust and easily administered test.

One of the major criticisms of all of the versions of PIC that have been published to date, has been their length. Subsequently, the total number of items on the PIC/2 was reduced. Problems were also identified with the wording of specific items. As a result, an attempt was made to modify the item content in order to improve item clarity on the PIC/2. As it has been several years since the last revision, it was also necessary to collect a new set of representative contemporary norms (Lachar, 1995).

Several other changes based on research conducted on the PIC-R also need to be incorporated. For example, the PIC/2 validity scales will be extended to include a measure of semantic inconsistency and a measure of malingering. Finally, subscales corresponding to the various clinical scales will be included in the PIC/2 in order to increase its similarity to the PIY (Lachar, 1995). Since the PIC/2 has a great deal of overlap with the PIC-R in terms of both items and item content, it is likely that the PIC/2 is as reliable and valid as its predecessor.

Interparental and Child-Parent Agreement on the PIC

Since its origin, few studies have been conducted on interparental agreement on the PIC. One of the first attempts to study agreement between parents examined the degree of similarity between mother and father generated protocols in both clinical and non-clinical populations (Roskos, 1974). In this study the average correlation between protocols was measured as .69 for the clinical sample and .57 for the non-clinical sample. Similarly, Wirt, Lachar, Klinedinst, & Seat (1984) examined interparental agreement on a large sample of clinical children and adolescents. The results of this study indicated that there were no significant differences in the behavioral ratings of mothers and fathers.

Hulbert et al. (1986) also conducted an in depth examination of the endorsements of the mothers and fathers of 360 behaviorally and emotionally disturbed children and adolescents. Data analysis indicated

that there were significant differences between the reports of the mothers and the fathers, both for the overall profile and for six of the clinical scales. In most cases the fathers' scores were found to indicate less pathology than mothers'. These results were consistent with the findings of other studies of interparental agreement, for which mothers' reports were found to be quite different than fathers' reports, mothers ratings of symptoms being significantly higher (Eisenstadt et al., 1994; Thurber & Osborn, 1993; Christianson et al., 1992; Jensen, Traylor, et al., 1988; Jacob et al., 1982). Comparison of the endorsements, however, did indicate that the mean interpretive agreement was 61%. The degree to which the behavior was seen by both parents as clinical or normal, was somewhat higher, with a mean of 76%. As a result, the interparental agreement on the PIC was reported to be relatively high compared to similar instruments.

One final study conducted by Clark (1987) on the interparent reliability of the PIC, examined the PIC profiles completed by both parents of 30 learning disabled and 15 emotionally disturbed children. Analysis of the relationship between the PIC profiles and the child's performance on the WISC-R and the Walker Problem Behavior Identification Checklist indicated that there was high interparental agreement across all the clinical scales. Thus, both mothers and fathers were reported to be equally qualified to identify the salient personality characteristics of their children (Clark, 1987). However, it was again noted that the mothers were more

likely to rate their children as having more behavioral problems than the fathers, which was consistent with the previous data obtained by Hulbert et al. (1986) and others.

The relationship between parental PIC and child PIY reports has yet to be extensively explored, since the PIY is a new clinical instrument. Consequently, there are no child-parent concordance rates for these instruments with which to compare to previous research on other behavioral measures. Initial analyses of the PIY standardization data have indicated that significant correlations (ranging from $\underline{r}$ = .22 to $\underline{r}$ = .68, with most correlations in the moderate range) exist between corresponding PIY and PIC-R clinical scales (Lachar & Gruber, 1995), thus demonstrating evidence of moderate child-parent agreement.

Although relatively few studies have been conducted on interparental agreement using the PIC, the research conducted to date has shown it to exhibit relatively high interparental agreement in comparison to most other behavioral measures. Also, the studies that have been conducted on interparental agreement have been limited to the clinical scales of the PIC, and have not extensively examined the effect of factors that may affect agreement. With the recent publication of the PIY and the upcoming publication of the PIC/2, further study of reliability and validity issues are necessary.

Present Study

This study was designed to examine inter-informant reliability of ratings of child behavior through estimations of interparental and child-parent agreement. Previous research has shown the PIC to be both valid and highly reliable, even with respect to interparental agreement (e.g., Hulbert et al., 1986). The present study examined interparental agreement in the new experimental version of the PIC, and child-parent agreement using the PIC/2 and the recently developed PIY.

Interparental agreement was measured in several ways, including correlational analysis and multivariate analysis of variance of both the PIC/2 factor scales and a subset of PIC/2 profile scales. Child-parent agreement was measured through a correlational analysis of the subset of PIC/2 profile scales and their corresponding PIY profile scales. It was necessary to limit the analysis to a subset of profile scales in order to maintain an appropriate variable to subject ratio. The PIC/2 and PIY profile scales chosen for comparison were reported to have both substantial overlap in content and high correlations in the PIY standardization sample. To avoid problems resulting from a lack of validity measures inherent in many studies conducted on other behavior rating scales, a measure of response set was included. Since a comparison of the entire profile was not conducted, a measure of general functioning was also included. Finally, measures of both internalizing and externalizing behavior were included

because differences in behavior reports would be most evident on these scales.

Hypotheses

The following predictions were made for the present sample of school-aged children and their parents.

Interparental agreement.

1. (a) Comparison of mothers' and fathers' PIC profiles will reveal significant differences in mean endorsements of behavior with mothers' ratings being higher (i.e., in the direction of greater pathology) than fathers' ratings.

1. (b) There will be a significant correlation between mothers' and fathers' PIC profiles for both the clinical scales and the broadband factor scales.

1. (c) The level of interparental agreement for both the clinical scales and the broadband factor scales will be higher for externalizing behavior than for internalizing behavior.

Child-parent agreement.

2. (a) There will be a significant positive correlation between parents' PIC profiles and their children's PIY profiles. However, this relationship will be weaker than the interparental relationship.

2. (b) Child-parent agreement will be higher for externalizing behavior than for internalizing behavior.

Chapter II

Method

Subjects

Research participants consisted of the families of 60 (26 male, 34 female) children between the ages of 9 and 16 years, with a mean age of 12.42 years (SD = 1.99 years). The participating families were predominantly Caucasian (n = 58, 96.67%), and consisted primarily of biological parents (n = 109, 90.83%). Refer to Tables 1 and 2 for a complete description of the demographic characteristics of the sample. Socio-economic status (SES) was assessed using the Blishen Scale (Blishen, Carroll & Moore, 1987), for which high scores indicate high SES standing. SES was calculated using annual income and level of education, and is based on Canadian census information from 1981. For the purpose of this study, SES scores were based upon either the mother's score or the father's score, if only one parent was employed, or the greater of the two scores if both parents were employed. Socio-economic information for the data sample is presented in Table 3. Study participants were solicited from University of Windsor psychology classes, and a variety of community groups. Data collected consisted of pairs of PIC/2 profiles generated by the child's mother and father, and a PIY profile generated by the child.

Table 1

Distribution of Age and Ethnicity of Participating Children by Gender

	Males (n = 26)		Females (n = 34)	
Variable	n	%	n	%
Age:				
9	1	3.85	4	11.76
10	3	11.54	3	8.82
11	6	23.08	5	14.71
12	3	11.54	4	11.76
13	5	19.23	8	23.53
14	2	7.69	6	17.65
15	4	15.38	2	5.88
16	2	7.69	2	5.88
Ethnicity:				
Caucasian	24	92.31	34	100.00
Black	1	3.85	0	0.00
Other [a]	1	3.85	0	0.00

[a] Did not identify themselves as members of Caucasian, Black, Hispanic, or Asian groups.

Table 2

Distribution of Parental Ethnicity and Relationship to Child by Gender

	Mothers (n = 60)		Fathers (n = 59)	
Variable	n	%	n	%
Ethnicity:				
Caucasian	57	95.00	56	94.92
Black	1	1.67	1	1.69
Other [a]	2	3.33	2	3.39
Relationship to Child:				
Biological	54	90.00	55	93.22
Adopted	2	3.33	2	3.39
Step-Parent	4	6.67	1	1.69
Other [b]	0	0.00	1	1.69

[a] Did not identify themselves as a member of Caucasian, Black, Hispanic, or Asian groups.

[b] Includes legal guardians and significant others.

Table 3

Socio-economic Status of Participating Families

	Families (n = 60)	
Socio-economic status	n	%
Over 69.99 [a]	4	6.67
60.00 - 69.99 [b]	16	26.67
50.00 - 59.99 [c]	9	15.00
40.00 - 49.99 [d]	11	18.33
30.00 - 39.99 [e]	15	25.00
Under 30.00 [f]	5	8.33

[a] Includes Physicians, Lawyers, Engineers, Professors, Judges, Dentists, Optometrists, and senior officials.

[b] Includes Social Workers, Teachers, Psychologists, Architects, Scientists, and Counsellors.

[c] Includes Managers, Librarians, Ministers of Religion, Nurses, Physiotherapists, Occupational Therapists, and Police Officers.

[d] Includes Private Investigators, Sales Occupations, Adjustors, Collectors, Clerks, Mail Carriers, and Computer Analysts.

[e] Includes Mechanics, Truck Driver, Security Guards, Musicians, and Specialized Labourers.

[f] Includes Cashiers, General Labourers, Farmers, Carpenters, Tailors, and Food Preparation occupations.

Measures

The present study evaluated child behavior from a variety of perspectives. Measures used in this study included the PIC/2, which was completed by both mothers and fathers, and the PIY, which was completed by the child.

PIC/2. This study used the full length version of the PIC/2 (Wirt, et al., 1994), which is comprised of 390 true-false items concerning the child's cognitive ability, emotional stability, and behavioral status. The PIC/2 consists of 20 scales, including 3 validity scales, 1 screening scale, 12 clinical scales, and 4 broadband factor scales (see Table 4 for a complete listing of PIC/2 scales). Measures include scales reflecting informant response set validity, cognitive functioning, externalizing behavior, internalizing behavior, family dysfunction, social ineptness, and broadband factors. PIC/2 scaled scores are measured in T-scores; increases in T reflecting an increase in child behavior problems (with the exception of the validity scales, which reflect an increase in informant distortion). PIC/2 scales are normed separately by gender of the child, for ages 3-5 and 6-16 years, with the exception of the Intellectual Screening (IS) scale, which has separate norms for ages 3-5, 6, 7, 8, 9, and 10-16 years.

The original PIC scales have been validated in a myriad of clinical populations including pediatric settings (Andrasik, Kabela, Quinn, Attanasio, Blanchard, & Rosenblum, 1988; Breen & Barkley, 1983; Fuerst,

Table 4

Categorization of PIC/2 Response Set Validity, Clinical, and Broadband Factor Scales

Category		PIC/2 Scale
Validity		Lie (L) Frequency (F) Defensiveness (DEF)
Screening		Adjustment (ADJ)
Clinical		
	Cognitive functioning	Achievement (ACH) Intellectual Screening (IS) Development (DVL)
	Externalizing behavior	Delinquency (DLQ) Hyperactivity (HPR)
	Internalizing behavior	Somatic Concern (SOM) Depression (D) Withdrawal (WDL) Anxiety (ANX)
	Family dysfunction	Family Relations (FAM)
	Social ineptness	Psychosis (PSY) Social Skills (SSK)
Broadband Factor		Undisciplined / Poor Self-Control (I) Social Incompetence (II) Internalization / Somatic Complaints (III) Cognitive Development (IV)

Fisk, & Rourke, 1989; Nieman & DeLong, 1987; Pritchard, Ball, Culbert & Faust, 1988; Wagner, Smith, & Norris, 1988), school settings (Clark, Kehle, Bullock, & Jenson, 1987; Grossberg & Cornell, 1988), and preschool settings (Keenan & Lachar, 1988). Although information regarding the reliability and validity of the PIC/2 is not currently available, it is assumed that the psychometric properties of the PIC/2 will be comparable to its predecessor, the PIC-R.

Studies conducted on the PIC-R have generally supported the reliability of its scales. Estimates of test-retest reliability on the PIC-R range from .71 to .89 while measures of internal consistency for the PIC-R scales range from .57 to .86 with a mean of .74 (Wirt et al., 1984). Research suggests that the PIC-R scales demonstrate discriminant validity, differentiating between non-clinical and clinical populations, as well as between specific clinical populations (Keenan & Lachar, 1988; Lachar et al., 1984). Research also indicates that the PIC-R scales demonstrate incremental and convergent validity. Correlational and regression analyses have shown the PIC-R scales to be highly related to diagnoses and estimates of cognitive ability, and to significantly increase predictive ability with such measures (Keenan & Lachar, 1988; Kline et al., 1992; Lachar et al., 1984).

PIY. The PIY (Lachar & Gruber, 1995) is the self-report counterpart of the PIC, and is comprised of 270 true-false items concerning the child's

cognitive ability, emotional stability, and behavioral status. The PIY consists of 14 scales, including 4 validity scales, 1 screening scale, and 9 clinical scales which are further divided into 24 subscales (see Tables 5 and 6 for a complete listing of PIY scales and subscales). The PIY clinical scales and their subscales provide measures of informant response set validity, cognitive functioning, externalizing behavior, internalizing behavior, family dysfunction, and social skills deficits. PIY scaled scores are measured in T-scores, increases in T reflecting increases in child behavior problems (with the exception of the validity scales, which represent increases in informant distortion). PIY scales are normed separately by gender of the child.

The reliability and validity of the PIY have not been extensively reported in the literature due to the recent publication of the PIY. The initial data from the pilot study which created the PIY indicated that with further study and minor revisions, such as the inclusion of validity scales to screen out the potentially invalid profiles, the PIY would be highly rated with respect to both reliability and validity. In fact, subsequent examination of the PIY after minor revisions indicated good construct validity (Lachar & Gruber, 1993). Data collected in the PIY standardization sample suggest that the instrument is both reliable and valid. An examination of the psychometric properties of the PIY has indicated that it possesses both good test-retest reliability and internal consistency (Lachar & Gruber, 1995). Content validity has been demonstrated through high

Table 5

Categorization of PIY Response Set Validity, and Clinical scales

Category	PIY Scale
Validity	Validity (VAL) Inconsistency (INC) Dissimulation (FB) Defensiveness (DEF)
Screening	Classroom Screening (CLASS)
Clinical	
Cognitive functioning	Cognitive Impairment (COG)
Externalizing behavior	Delinquency (DLQ) Impulsivity and Distractibility (ADH)
Internalizing behavior	Somatic Concern (SOM) Psychological Discomfort (DIS) Social Withdrawal (WDL)
Family dysfunction	Family Dysfunction (FAM)
Social ineptness	Reality Distortion (RLT) Social Skills Deficits (SSK)

Table 6

Listing of PIY Subscales by Clinical Scale

PIY Clinical Scale	PIY Subscale
Cognitive Impairment (COG)	Poor Achievement and Memory (COG1) Inadequate Abilities (COG2) Learning Problems (COG3)
Impulsivity/ Distractibility (ADH)	Brashness (ADH1) Distractibility/Overactivity (ADH2) Impulsivity (ADH3)
Delinquency (DLQ)	Antisocial Behavior (DLQ1) Dyscontrol (DLQ2) Noncompliance (DLQ3)
Family Dysfunction (FAM)	Parent-Child Conflict (FAM1) Parent Maladjustment (FAM2) Marital Discord (FAM3)
Reality Distortion (RLT)	Feelings of Alienation (RLT1) Hallucinations and Delusions (RLT2)
Somatic Concern (SOM)	Psychosomatic Syndrome (SOM1) Muscular Tension and Anxiety (SOM2) Preoccupation with Disease (SOM3)
Psychological Discomfort (DIS)	Fear and Worry (DIS1) Depression (DIS2) Sleep Disturbance (DIS3)
Social Withdrawal (WDL)	Social Introversion (WDL1) Isolation (WDL2)
Social Skills Deficits (SSK)	Limited Peer Status (SSK1) Conflict with Peers (SSK2)

correlations between the PIY and PIC-R items, while convergent validity was evident from PIY scale correlations with other rating scales, such as the MMPI and the PIC-R (Lachar & Gruber, 1995).

Procedure

After the study was cleared by the Departmental Ethics Committee of the Department of Psychology at the University of Windsor, research recruitment forms were sent to the families of the children of interest in the study through students at the university or community groups. Each recruitment form consisted of a short description of the purpose of the study and how it would be conducted, along with a reply section to complete and sign, if they wished to participate. When recruitment forms were returned, those interested were contacted to set up test sessions (see Appendix A for a copy of the recruitment form).

Testing sessions were conducted either at the home of the individual or at the university, dependent upon which was more convenient. Testing sessions began with a short briefing about the purpose of the study, anonymity, feedback, and participant rights. At this time all participants were required to read and complete consent forms (see Appendix B for a copy of the parent-child consent form). The parents were then required to fill out a short form regarding demographic information (for example, age of the parents, if the child was adopted, and so on; see Appendix C for a copy of the demographics form).

After the initial briefing, the participants were instructed to complete the questionnaires independently. The mother and the father completed the PIC/2 while the child completed the PIY. At the end of the test session the participants were thanked, given a short debriefing of what the researcher's expectations were, and the opportunity to receive feedback about the final results of the study.

The present study was designed to determine if differences exist between parental reports on the PIC/2, if parental endorsement of child behavior is moderated by gender or gender interaction, and what level of agreement exists between mother, father, and child ratings. Correlational analysis was used to determine the level of interparental agreement on the factor scales of the PIC/2. Multivariate analysis of variance was used to test for the presence of gender-based differences on the four broadband factor scales of the PIC/2.

Correlational analysis was also used to compare mother and father reports on a subset of six PIC/2 scales: a measure of validity, Defensiveness (DEF); a general screening measure, Adjustment (ADJ); two measures of externalizing behavior, Hyperactivity (HPR) and Delinquency (DLQ); and two measures of internalizing behavior, Depression (D) and Anxiety (ANX). Multivariate analysis of variance was also conducted on this subset of PIC/2 scales to test for gender-based differences.

Finally, correlational analysis was used to determine the relationship between these selected scales of the two sets of PIC/2 protocols and related scales on the child's PIY. The PIY scales included in this analysis consisted of a measure of validity, Defensiveness (DEF); a general screening measure, Classroom Screening (CLASS); two measures of externalizing behavior, Impulsivity and Distractibility (ADH) and Delinquency (DLQ); and a measure of internalizing behavior, Psychological Discomfort (DIS) (see Table 7 for an illustration of correspondence between PIY and PIC/2 profile scales selected for the present study).

Table 7

Correspondence Between PIY and PIC/2 Scales Selected for the Present Study

	Measure	
Scale Type	PIY	PIC/2
Validity	Defensiveness (DEF)	Defensiveness (DEF)
General Screening	Classroom Screening (CLASS)	Adjustment (ADJ)
Clinical	Impulsivity and Distractibility (ADH)	Hyperactivity (HPR)
	Delinquency (DLQ)	Delinquency (DLQ)
	Psychological Discomfort (DIS)	Depression (D) Anxiety (ANX)

Chapter III

Results

Overview of Data Analysis

The present study was designed to determine whether differences exist between reports of child behavior from multiple informants. First, multivariate analysis of variance was used to ascertain whether the reports of mothers and fathers were significantly different, while also testing for the presence of gender-based differences on both the PIC/2 Broadband Factor scales and a subset of Clinical scales. To determine the level of agreement between parental reports, Pearson product-moment correlations were calculated for both sets of scales. A correlational analysis was also used to determine the level of agreement between the parental PIC/2 Clinical scales and the child's corresponding PIY Clinical scales.

Each of the previously described statistical analyses were based upon the data for the total sample (n = 60 families). However, spoiled data sheets and insufficient responses on several data sheets resulted in unequal n's for some groups. The final data set consisted of 55 Mother-Father-Child protocols, 1 Mother-Father protocol, 3 Mother-Child protocols, and 1 Father-Child protocol. Although some aspects of the hypotheses were directional, all analyses employed 2-tailed tests of significance and an alpha level of .05.

Hypothesis 1: Interparental Agreement

1. (a) Differences in parental PIC/2 protocols related to gender effects.

It was predicted that there would be significant differences between parental endorsements of behavior on both the Broadband Factor scales (i.e., I, II, III, and IV) and the subset of Clinical scales (i.e., DEF, ADJ, HPR, DLQ, D, and ANX), with mothers' ratings indicating greater pathology than fathers' ratings. The two-way multivariate analysis of variance of parental endorsements of child behavior on the PIC/2 Broadband Factor scales indicated the existence of significant differences based upon child gender: F (4, 109) = 2.79, p = .03 (see Table 8 for a complete listing of effects and multivariate tests for significance). Separate univariate F-tests for each of the four factor scales (df = 1, 112) did not identify any significant differences based upon child gender (see Table 9 for means, standard deviations and univariate F-scores).

All other effects generated in the multivariate analysis of variance (df = 4, 109), including differences between parental reports, were not significant (see Table 8). Similarly, separate univariate F-tests for each PIC/2 factor scale (df = 1, 112) did not identify any significant differences between parental reports on the four factor scales (see Table 10 for means, standard deviations, and univariate F-scores).

Table 8

Multivariate Tests for Significance of Differences Between Parental Endorsements of Child Behavior on the PIC/2 Broadband Factor Scales

	Effect		
Test	Child Gender	Parent Gender	Gender Interaction
Pillais			
Value	0.09276	0.01192	0.00166
F	2.78601	0.32875	0.04524
p	$p < .03$	n. s.	n. s.
Hotellings			
Value	0.10224	0.01206	0.00166
F	2.78601	0.32875	0.04524
p	$p < .03$	n. s.	n. s.
Wilks			
Value	0.90724	0.98808	0.99834
F	2.78601	0.32875	0.04524
p	$p < .03$	n. s.	n. s.

n. s. Not Significant

Table 9

Means, Standard Deviations and Univariate F-Scores for Parental Endorsements of Behavior on the PIC/2 Broadband Factor Scales for Male and Female Children

	Parental T-Score for Male Children		Parental T-Score for Female Children		Difference	
Factor	M	SD	M	SD	F	p
I	49.849	10.423	54.746	17.746	3.03128	n. s.
II	49.208	10.540	51.079	12.817	0.73607	n. s.
III	53.943	13.934	55.286	13.312	0.25522	n. s.
IV	49.660	14.299	46.698	11.787	1.47156	n. s.

I Undisciplined / Poor Self-Control
II Social Incompetence
III Internalization / Somatic Complaints
IV Cognitive Development

n. s. Not Significant

Table 10

Means, Standard Deviations and Univariate F-Scores for Parental Endorsements of Child Behavior on the PIC/2 Broadband Factor Scales

	Mother T-Score		Father T-Score		Difference	
Factor	M	SD	M	SD	F	p
I	53.051	15.512	51.947	14.584	0.12010	n. s.
II	49.695	11.133	50.772	12.564	0.26914	n. s.
III	55.525	13.536	53.789	13.642	0.45547	n. s.
IV	48.169	13.247	47.930	12.899	0.02749	n. s.

I Undisciplined / Poor Self-Control
II Social Incompetence
III Internalization / Somatic Complaints
IV Cognitive Development

n. s. Not Significant

The two-way multivariate analysis of variance between parental behavior endorsements on the selected subset of PIC/2 Clinical scales (df = 6, 107) and subsequent univariate F-tests for each of the six PIC/2 Clinical scales (df = 1, 112) did not identify any significant differences between parental endorsements of child behavior (see Table 11 and Table 12 for the results of multivariate tests, means, standard deviations, and univariate F-scores for the PIC/2 Clinical scales). As was reported with the PIC/2 factor scales, the data do not support the existence of differences between parental reports.

1. (b) Correlation of parental endorsements of behavior on the PIC/2.

It was predicted that there would be a significant correlation between mothers' and fathers' PIC/2 profiles for both the Clinical and the Broadband Factor scales. Table 13 lists the product-moment correlations for mother's and father's PIC/2 Broadband factor scales. The average correlation between parental endorsements of child behavior for these scales was .50, with correlations ranging from .23 to .88. A large number of the correlations calculated in this analysis (96.4 percent) were significant at the $p < .05$ level or greater.

Similar results were obtained in the analysis of the PIC/2 Clinical scales. Correlational analysis of mother's and father's T-scores revealed a mean correlation of .32, with correlations ranging from -.51 to .88 (see Table 14 for the product-moment correlations for the subset of PIC/2 Clinical

Table 11

Multivariate Tests for Significance of Differences Between Parental Endorsements of Child Behavior on the PIC/2 Clinical Scales

	Effect		
Test	Child Gender	Parent Gender	Gender Interaction
Pillais			
Value	0.03191	0.00886	0.01540
F	0.58785	0.15940	0.27890
p	n. s.	n. s.	n. s.
Hotellings			
Value	0.03296	0.00894	0.01564
F	0.58785	0.15940	0.27890
p	n. s.	n. s.	n. s.
Wilks			
Value	0.96809	0.99114	0.98460
F	0.58785	0.15940	0.27890
p	n. s.	n. s.	n. s.

n. s. Not Significant

Table 12

Means, Standard Deviations and Univariate F-Scores for Parental Endorsements of Child Behavior on the PIC/2 Clinical Scales

	Mother T-Score		Father T-Score		Difference	
Scale	M	SD	M	SD	F	p
DEF	49.373	9.476	50.596	8.906	0.52246	n. s.
ADJ	54.305	13.485	52.842	14.156	0.29529	n. s.
HPR	49.305	11.470	48.070	10.552	0.30766	n. s.
DLQ	55.051	15.528	54.105	17.367	0.8477	n. s.
D	55.153	12.737	53.930	15.096	0.17912	n. s.
ANX	55.203	11.788	53.789	13.016	0.30766	n. s.

n. s. Not Significant

Table 13

Pearson Correlations Between Parental Endorsements of Child Behavior on the PIC/2 Broadband Factor Scales

Variable	2	3	4	5	6	7	8
Mother's PIC/2							
1. I	.29[a]	.48[c]	.44[c]	**.88**[c]	.40[b]	.34[b]	.52[c]
2. II		.40[b]	.51[c]	.23	**.75**[c]	.41[b]	.36[b]
3. III			.51[c]	.44[c]	.30[a]	**.68**[c]	.54[c]
4. IV				.40[b]	.55[c]	.49[c]	**.77**[c]
Father's PIC/2							
5. I					.49[c]	.52[c]	.58[c]
6. II						.52[c]	.58[c]
7. III							.60[c]
8. IV							

I Undisciplined / Poor Self-Control
II Social Incompetence
III Internalization / Somatic Complaints
IV Cognitive Development

[a] $p < .05$
[b] $p < .01$
[c] $p < .001$

Table 14

Pearson Correlations Between Parental Endorsements of Child Behavior on the PIC/2 Clinical Scales

Variable	2	3	4	5	6	7	8	9	10	11	12
Mother's PIC/2											
1. DEF	-.46[c]	-.06	-.26[a]	-.51[c]	-.37[b]	.46[c]	-.23	-.06	-.14	-.30[a]	-.22
2. ADJ		.59[c]	.83[c]	.79[c]	.63[c]	-.50[c]	.81[c]	.59[c]	.71[c]	.66[c]	.60[c]
3. HPR			.59[c]	.22	.25	-.29[a]	.60[c]	.80[c]	.60[c]	.23	.31[a]
4. DLQ				.58[c]	.44[c]	-.41[b]	.68[c]	.59[c]	.82[c]	.52[c]	.41[b]
5. D					.85[c]	-.33[a]	.63[c]	.26	.51[c]	.75[c]	.71[c]
6. ANX						-.36[a]	.59[c]	.27[a]	.49[c]	.64[c]	.77[c]
Father's PIC/2											
7. DEF							-.50[c]	-.23	-.43[c]	-.37[b]	-.37[b]
8. ADJ								.62[c]	.88[c]	.79[c]	.77[c]
9. HPR									.65[c]	.30[a]	.30[a]
10. DLQ										.66[c]	.63[c]
11. D											.86[c]
12. ANX											

[a] $p < .05$
[b] $p < .01$
[c] $p < .001$

scales). As was seen in the factor scales, a large number of these correlations were significant (84.8 percent significant at the $p < .05$ level).

1. (c) Level of interparental agreement and the effect of symptomatology type.

It was predicted that the level of interparental agreement would be higher for externalizing behavior than for internalizing behavior. The interparental agreement correlations for each of the PIC/2 Broadband factor scales are presented in Table 15. The average level of interparental agreement on the four factor scales was calculated at .77, with coefficients ranging from .68 (III) to .88 (I). Each of the interparental agreement coefficients for the factor scales was significant at the $p < .001$ level. Although all interparental agreement correlations were significant, the highest correlations between parental reports were found to occur on factor scales measuring externalizing behaviors (e.g., I: Undisciplined / Poor Self-Control), rather than on factor scales measuring internalizing behavior (e.g., III: Internalization / Somatic Complaints).

Interparental agreement correlations for the subset of PIC/2 Clinical scales are presented in Table 16. The average level of interparental agreement for these scales was determined to be .73. While the agreement coefficients for each of the Clinical scales were found to be significant at the $p < .001$ level, correlations covered a relatively wide range. Parental correlations ranged from .46 (DEF) to .82 (DLQ). If the correlations are

Table 15

Interparental Agreement Correlations for the PIC/2 Broadband Factor Scales

Factor	Mother-Father T-Score Correlation	Level of Significance
I	.88	$p < .001$
II	.75	$p < .001$
III	.68	$p < .001$
IV	.77	$p < .001$

I Undisciplined / Poor Self-Control
II Social Incompetence
III Internalization / Somatic Complaints
IV Cognitive Development

Table 16

Interparental Agreement Correlations for the PIC/2 Clinical Scales

Scale	Mother-Father T-Score Correlation	Level of Significance
DEF	.46	$p < .001$
ADJ	.81	$p < .001$
HPR	.80	$p < .001$
DLQ	.82	$p < .001$
D	.75	$p < .001$
ANX	.77	$p < .001$

considered without the Defensiveness scale (since it is a measure of the parent's approach to the questions, rather than the child's behavior) the mean level of interparental agreement increases to .79. As was reported for the PIC/2 Broadband factor scales, there was a trend toward greater parental agreement for PIC/2 Clinical scales which measure externalizing type behaviors (e.g., HPR and DLQ), than for scales which measure internalizing behavior (e.g., D and ANX).

Hypothesis 2: Child-parent Agreement

2. (a) Correlation of parental and child endorsements of behavior on the PIC/2 and PIY Clinical scales.

It was predicted that there would be a significant positive correlation between parental endorsements of child behavior on the selected subset of PIC/2 Clinical scales and their children's endorsements of behavior on the corresponding PIY Clinical scales (i.e., DEF, CLASS, ADH, DLQ and DIS). However, it was expected that the resulting coefficients of agreement would be weaker than those obtained through a comparison of parental protocols. Table 17 provides a list of the means and standard deviations for the selected group of Clinical scales on the PIY. Inspection of the children's mean endorsements of behavior on the Clinical scales of the PIY suggests that both mothers (T-score range of 49.305 to 55.203) and fathers (T-score range of 48.070 to 54.105) provided higher ratings of psychopathology than did their children (T-score range of 45.373 to 52.763). Figure 1 illustrates

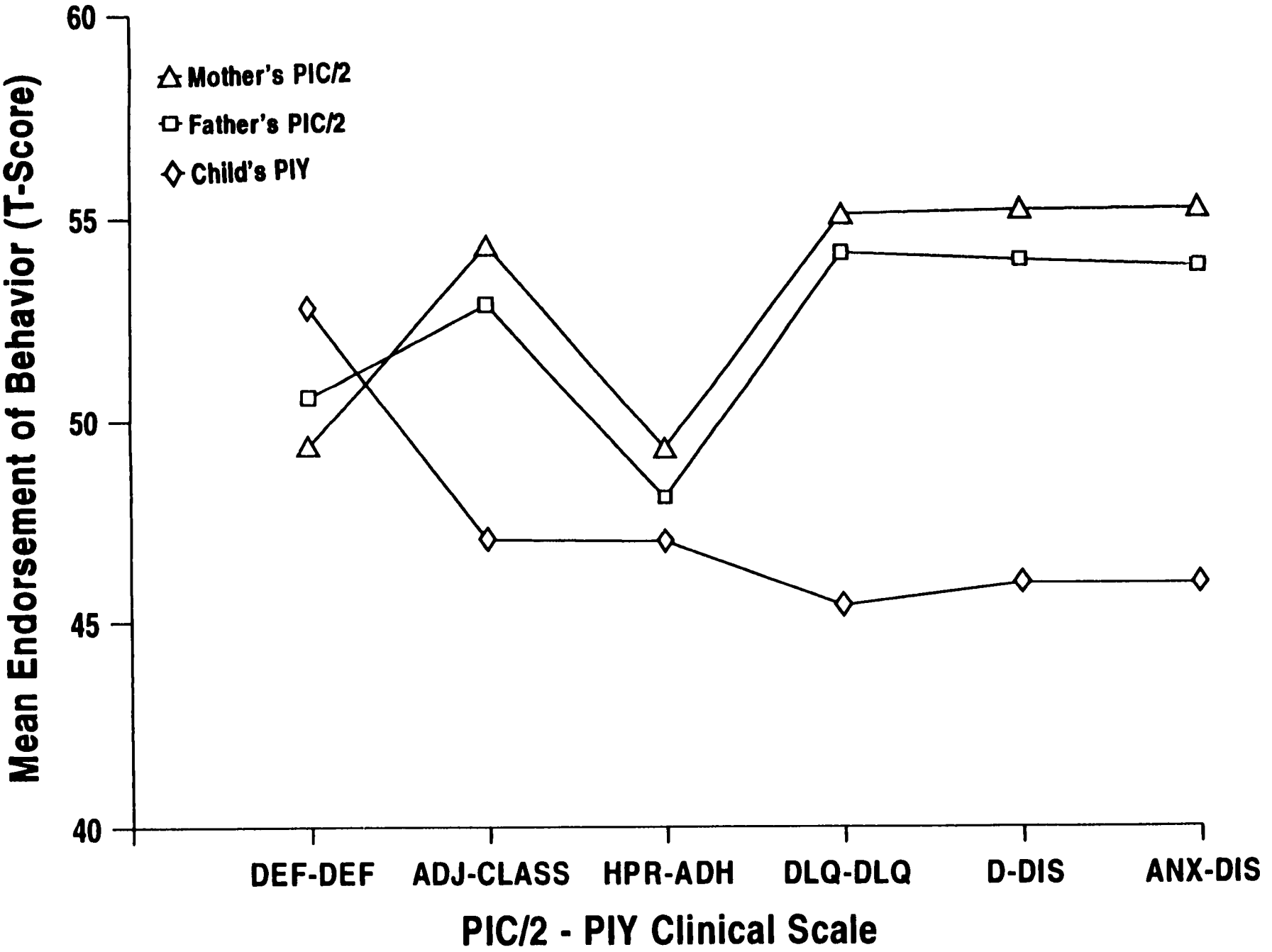
Table 17

Means and Standard Deviations for Child Endorsements of Behavior on the PIY Clinical Scales

	Child T-Score	
Scale	M	SD
DEF	52.763	12.009
CLASS	47.017	8.961
ADH	46.966	10.391
DLQ	45.373	8.578
DIS	45.932	10.352

Figure Caption

Figure 1. Comparison of mean parental endorsements of child behavior on the PIC/2 Clinical Scales with mean child endorsements of behavior on the PIY Clinical Scales.


60
55
50
45
40
Mother's PIC/2
Father's PIC/2
Child's PIY
Mean Endorsement of Behavior (T-Score)
DEF-DEF
ADJ-CLASS
HPR-ADH
DLQ-DLQ
D-DIS
ANX-DIS
PIC/2 - PIY Clinical Scale

the relationship between behavioral endorsements of mothers, fathers, and children.

In order to determine the level of correspondence between parental and child protocols, it is necessary to examine correlations for both mother-child and father-child dyads. Results of the correlational analysis for mother's PIC/2 Clinical scale T-scores and their children's PIY Clinical scale T-scores are presented in Table 18. The average correlation between maternal and child endorsements of behavior for these scales was .18, with a range from -.77 to .85. In this analysis, 76.4 percent of the correlations calculated were significant at the $p < .05$ level or greater.

Product-moment correlations for father's PIC/2 Clinical scale T-scores and their children's PIY Clinical scale T-scores are presented in Table 19. The average correlation between paternal and child endorsements of behavior for these scales was .19, with correlations ranging from -.77 to .88. Of the correlations calculated, 87.3 percent were significant at the $p < .05$ level or greater.

2. (b) Level of child-parent agreement and the effect of symptomatology type.

It was anticipated that the coefficients of child-parent agreement would be higher for measures of externalizing behavior than for measures of internalizing behavior. The mother-child agreement correlations for each of the PIC/2 - PIY Clinical scale pairings are presented in Table 20. The

Table 18

Pearson Correlations of Maternal Endorsements of Child Behavior on the PIC/2 Clinical Scales with Child Endorsements of Behavior on the PIY Clinical Scales

Variable	2	3	4	5	6	7	8	9	10	11
Mother's PIC/2										
1. DEF	-.46[c]	-.06	-.26[a]	-.51[c]	-.37[b]	**.12**	-.33[a]	-.17	-.16	-.35[b]
2. ADJ		.59[c]	.83[c]	.79[c]	.63[c]	-.43[c]	**.42[c]**	.41[c]	.52[c]	.26
3. HPR			.59[c]	.22	.25	-.45[c]	.22	**.36[b]**	.39[b]	.07
4. DLQ				.58[c]	.44[c]	-.43[c]	.43[c]	.41[c]	**.63[c]**	.19
5. D					.85[c]	-.23	.39[c]	.25	.32[a]	**.42[c]**
6. ANX						-.26[a]	.32[a]	.24	.28[a]	**.38[b]**
Child's PIY										
7. DEF							-.54[c]	-.77[c]	-.77[c]	-.34[b]
8. CLASS								.65[c]	.80[c]	.78[c]
9. ADH									.84[c]	.49[c]
10. DLQ										.52[c]
11. DIS										

[a] $p < .05$
[b] $p < .01$
[c] $p < .001$

Table 19

Pearson Correlations of Paternal Endorsements of Child Behavior on the PIC/2 Clinical Scales with Child Endorsements of Behavior on the PIY Clinical Scales

Variable	2	3	4	5	6	7	8	9	10	11
Father's PIC/2										
1. DEF	-.50[c]	-.23	-.43[c]	-.37[b]	-.37[b]	**.40[b]**	-.36[b]	-.40[b]	-.44[c]	-.26
2. ADJ		.62[c]	.88[c]	.79[c]	.77[c]	-.41[b]	**.42[c]**	.40[b]	.50[c]	.31[a]
3. HPR			.65[c]	.30[a]	.30[a]	-.37[b]	.22	**.28[a]**	.34[b]	.06
4. DLQ				.66[c]	.63[c]	-.37[b]	.30[a]	.33[a]	**.49[c]**	.18
5. D					.86[c]	-.18	.44[c]	.32[a]	.38[b]	**.48[c]**
6. ANX						-.24	.36[b]	.27[a]	.30[a]	**.37[b]**
Child's PIY										
7. DEF							-.54[c]	-.77[c]	-.77[c]	-.34[b]
8. CLASS								.65[c]	.80[c]	.78[c]
9. ADH									.84[c]	.49[c]
10. DLQ										.52[c]
11. DIS										

[a] $p < .05$
[b] $p < .01$
[c] $p < .001$

Table 20

Child-Parent Agreement Correlations for Maternal PIC/2 Clinical Scales and Child PIY Clinical Scales

PIC/2 - PIY Scale Pairing	Mother-Child T-Score Correlation	Level of Significance
DEF - DEF	.12	n. s.
ADJ - CLASS	.42	$p < .001$
HPR - ADH	.36	$p < .006$
DLQ - DLQ	.63	$p < .001$
D - DIS	.42	$p < .001$
ANX - DIS	.38	$p < .003$

n. s. Not Significant

average level of mother-child agreement on the Clinical scales was calculated at .39, with coefficients ranging from .12 (DEF-DEF) to .63 (DLQ-DLQ). All of the mother-child agreement coefficients for the clinical scale pairings were significant at the $p < .006$ level or greater except the DEF-DEF pairing, which was not significant. If the correlations are considered without the Defensiveness scales (since they are measures of response set, rather than the child's behavior) the mean level of mother-child agreement increases to .44. Generally, mother-child correlations for scales measuring externalizing behaviors (e.g, DLQ-DLQ), were higher than those for scales measuring internalizing behavior (e.g., D-DIS and ANX-DIS). However, this was not the case for the HPR-ADH pairing, for which the mother-child agreement coefficient was lower than that of both internalizing measure pairings.

Father-child agreement correlations for each of the PIC/2 - PIY Clinical scale pairings are presented in Table 21. The average level of father-child agreement on the Clinical scales was determined to be .41, with coefficients ranging from .28 (HPR-ADH) to .50 (DLQ-DLQ). All father-child agreement coefficients for the clinical scale pairings were significant at the $p < .04$ level or greater. As was discovered with the mother-child correlations, father-child agreement correlations for scales measuring externalizing behaviors (e.g, DLQ-DLQ), were generally higher than those for scales measuring internalizing behavior (e.g., D-DIS and ANX-DIS).

Table 21

Child-Parent Agreement Correlations for Paternal PIC/2 Clinical Scales and Child PIY Clinical Scales

PIC/2 - PIY Scale Pairing	Father-Child T-Score Correlation	Level of Significance
DEF - DEF	.40	$p < .002$
ADJ - CLASS	.42	$p < .001$
HPR - ADH	.28	$p < .04$
DLQ - DLQ	.49	$p < .001$
D - DIS	.48	$p < .001$
ANX - DIS	.37	$p < .005$

However, evidence again indicates that level of agreement for the HPR-ADH pairing, was lower than that of both internalizing measure pairings.

Summary of Data Analysis

Significant interparental agreement correlations were observed for both the four PIC/2 Broadband factor scales and the subset of six PIC/2 Clinical scales chosen for study. Furthermore, interparental agreement correlations were generally higher on indices which measured externalizing behaviors. PIC/2 profiles (factor and clinical) generated by mothers and fathers were not found to be significantly different. Child-parent agreement measures (in the form of mother-child and father-child dyads) for pairings of PIC/2 and associated PIY Clinical scales were also observed to correlate significantly. As expected, the magnitude of the child-parent agreement correlations was less than the corresponding interparental agreement correlations. In most cases, both parents generated greater T-score ratings of psychopathology than did their children. Finally, the relationship between the type of symptomatology and the level of child-parent agreement was less definite than was observed in the analysis of interparental agreement. While some measures of externalizing behavior resulted in agreement coefficients which were greater than those of internalizing measures, other externalizing measures resulted in coefficients that were lower than internalizing agreement coefficients.

Chapter IV

Discussion

The purpose of the present study was to explore agreement between multiple informants when reporting on child behavior using behavior rating scales. The level of agreement between informants was examined through an analysis of the endorsements of child behavior by mothers, fathers, and their children when using the Personality Inventory for Children, Second Edition (PIC/2; Wirt et al., 1994) and the Personality Inventory for Youth (PIY; Lachar & Gruber, 1995). While previous research has reported the PIC to have relatively high interparental agreement correlations in comparison to other behavior rating scales (e.g., Hulbert et al., 1986), this has not yet been demonstrated for the latest edition, the PIC/2. Similarly, due to the recent publication of the PIY, little research has been conducted on agreement between parents and children using these measures.

Findings of the Present Study

The results of the data analysis generally support previous research conducted on interparental and child-parent agreement (e.g., Clark, 1987; Hulbert et al., 1986; Rey et al., 1992). Specifically, significant interparental agreement correlations were observed for both the clinical and the factor scales and were higher for indices of externalizing behavior. The data did not support the existence of significant differences between parental protocols. Child-parent agreement correlations were significant in most

cases. As expected, the child-parent coefficients of agreement were lower than their interparental counterparts, with children endorsing fewer behavior problems than did both parents. This finding is consistent with previous research reported in the literature. In a meta-analysis of multiple informant reports on child behavior, Achenbach et al. (1987) concluded that the level of agreement between informants depended upon the degree of similarity between the informants' roles with respect to the child. Thus, higher consistency would be expected to exist between informants who have similar roles (i.e., mothers and fathers), than between those who have more dissimilar roles (i.e., parents and teachers, or parents and children).

Interparental agreement.

Evidence from the data analysis primarily supported the first hypothesis, although the predicted differences between level of psychopathology as rated by mothers and fathers was not obtained. The existence of significant differences between parental protocols, which has been reported in many studies of interparental agreement (including those conducted on previous versions of the PIC; e.g., Hulbert et al., 1986), was not supported by the data analysis. However, the results of the present study must be interpreted with caution in comparison to previous research because of the type of sample used and the limited analysis of the protocols. First, the analysis conducted in the present study was limited to a specific subset of the instrument's scales, as opposed to most studies in the

literature, which generally examine the entire protocol. As well, most studies in the literature reporting significant differences between parental protocols have been conducted on clinical samples. In a non-clinical sample, such as the one used in this study, behavior problems are less likely to exist, and are therefore less likely to be subjectively evaluated by each parent and less likely to result in discrepancies between parental reports. Overall, it remains unclear as to whether differences in parental protocols exist in samples differing significantly from that of the present study.

Although the literature supports the concept of a gender interaction with respect to the way parents perceive their children's behavior (e.g., Margolin & Patterson, 1975), this potential bias in describing their children's behavior does not seem to impact significantly on behavior rating scale results. Consistent with previous research, the present study provides evidence that the PIC/2 is not significantly impacted by this observer bias. Again, this finding may also have been affected by the nature of the sample and the analysis used.

Subsequent aspects of the hypothesis were supported by the data analysis. First, a large number of significant correlations which covered a broad range were reported between parental protocols. This result is presumably due to two factors, namely the sample size and the nature of the test. Although the sample size of the present study is relatively small in comparison to most studies of agreement, the product-moment correlation

has been criticised for its insensitivity and potential to inflate the importance of coefficients (Shrout & Fleiss, 1979), even in small samples. Thus, the relatively weak correlations (e.g., $r < .35$) that were reported as significant in the present analysis may be due, in part, to the size of the sample.

The nature of the test is also likely to be responsible for the large number of moderate to high correlations reported in the analysis. Because of the relationship between the scales of the measures used, the level of behavior endorsed on one scale probably reflects the level of behavior that will be endorsed on a scale measuring similar types of behavior. As a result, in this analysis moderate correlations were found to exist between scales measuring similar types of behavior problems. In fact, such correlations often support the reliability and validity of a measure. Moderate correlations between related scales provide evidence of construct validity, while also supporting the distinction between the two scales.

Although a large number of the correlations reported in the analysis were significant, the highest correlations were generally the coefficients of agreement between parental protocols. While the coefficients of agreement covered a relatively wide range, the average level of interparental agreement on the scales chosen for analysis was very strong and was comparable to coefficients reported in previous studies (e.g., Clark, 1987; Hulbert et al., 1986). In fact, as was reported by Hulbert et al. (1986) for

the PIC-R, the level of interparental agreement reported in the present study was high in comparison to that of other instruments used in the assessment of child behavior.

Finally, the type of symptomatology being endorsed by parents seemed to affect the level of interparental agreement exhibited on the PIC/2 scales. The literature consistently reports that interparental agreement is greater for externalizing behavior, because it is more objective and observable, than for internalizing behavior, which is more subjective and less observable (Christensen et al., 1992). In the present study, mothers' and fathers' ratings of their children's behavior were more similar when they were asked about externalizing behaviors, than when asked about internalizing behaviors, providing further support to that argument.

Child-parent agreement.

Analysis of the data from the present study also supported most aspects of the second hypothesis. First, as was expected, significant child-parent agreement coefficients were found to exist on 11 of the 12 (91.7 percent) scale pairings analyzed. However, if the correlations are considered without the two Defensiveness scale pairings (since they are a measure of response set, rather than agreement about the presence/absence of child behaviors), all pairings analyzed are significantly correlated. Like much of the research that has been conducted on child-parent agreement, the correlations reported for both mother-child and father-child dyads

covered a relatively wide range. However, the correlations in the present study were higher than those that have been published in the literature (e.g., Achenbach et al., 1987). Thus, it seems that the level of child-parent agreement between the PIC/2 and the PIY is higher than is commonly reported for similar behavior rating scale comparisons.

Although the comparison of parent and child protocols yielded significant correlations, inspection of the data also revealed discrepancies between parent and child protocols. First, children seemed to have higher defensiveness ratings than did their parents. Thus, the children may have been more likely than their parents to engage in some form of impression management. Children also tended to endorse lower levels of problem behavior than did either their mothers or fathers. This may be due to their increased defensiveness when answering the questions, or could also be the result of differing perceptions regarding the acceptability of their own behavior.

Finally, the expectation that child-parent agreement would be higher for externalizing behavior was only partially supported by the data of the present study. While the child-parent agreement coefficients were often higher for externalizing behavior indices, this was not always the case. Some child-parent agreement coefficients for externalizing behavior were lower than the agreement coefficients for the internalizing behavior scales chosen for analysis. It is difficult to determine how atypical such a finding

is due to the fact that most studies of child-parent agreement are conducted on clinical samples and the fact that the limited range of scores in the non-clinical sample of the present study has reduced the opportunity for inter-rater discrepancies.

Implications of the Present Study

The findings of the present study provide support for the reliability and the validity of the measures used. The primary results of the present study (such as the correlations between the various scales of the PIC/2, as well as the very strong interparental agreement coefficients), suggest that the PIC/2 is comparable to its previous editions with respect to both construct validity and cross-informant reliability.

Although further research is necessary to provide a more complete picture of the psychometric properties of this behavioral assessment inventory, it has potential to be a valuable clinical tool. If further evidence is found to support the conclusions that were arrived at in the present study (i.e., high inter-scale correlations, very high interparental agreement coefficients, and the absence of significant differences between parental protocols), then it can be assumed that a second parental protocol does not necessarily contribute to a more comprehensive clinical picture of the child's behavioral functioning. Therefore, completion of the PIC/2 by one parent (preferably the primary caregiver) should be sufficient to determine an

accurate representation of both the nature and the severity of the child's problem behavior from the perspective of the parents.

While the results of the present study also provide some support for the reliability of the PIY, the validity of the child's profile is less certain. Child profiles must be interpreted with caution because of their relatively high defensiveness ratings and their relatively low clinical scales. Although the generalizability of this finding is limited due to the present sample of non-clinical children, similar results have been reported in a study which used the PIY with a clinical sample (Petti, 1996). Due to the low scores that were consistently reported on the clinical scales in the present study, it is unclear as to whether the completion of a child profile would contribute unique information to the assessment (other than possible denial of psychological and behavioral problems).

Limitations of the Present Study

One limitation of the present study is the relatively small sample size in comparison to many studies of interparental agreement. The sample size of the present study was insufficient for a complete analysis of the data because the power of the analysis would have been compromised. To accommodate for the sample size, only a select subset of scales were chosen for analysis. Hence, the use of a larger sample would have allowed for all scales to be examined in the analysis without sacrificing power, and the results may have been more conclusive.

A second limitation of the study is the distribution of the sample. This study was restricted to an analysis of the families of a non-clinical group of caucasian school-aged children where all members of the family (i.e., mother, father, and child) were willing to complete the assessment forms on a voluntary basis. The interactional patterns of such families may differ significantly from others, for example, families from different ethnic backgrounds or families with children who have behavior problems. As a result, the present findings may not generalize to dissimilar samples or groups.

Strengths of the Present Study

The present study has investigated the reliability and validity of two relatively new instruments for assessing child behavior. The present study has the potential to be viewed as a type of pilot study, or springboard for future research. It has identified several aspects of agreement which concur with the results of previous research, as well as several atypical results which require further exploration.

The present study has also made unique contributions to the literature in this area. First, the analyses were conducted on newly developed instruments which have not been previously reported on in the literature. This study is also unique in that it provides the first evaluation of child-parent agreement between the FIC and the PIY outside the initial PIY standardization sample.

Directions for Future Research

The sample used in the present study may limit the generalizability of the results. Additional support for the present findings must be pursued. A larger sample size would allow for a more complete analysis of the profiles, and the chance to determine if differences or gender effects are present when the entire profile is analyzed.

A second consideration is that the type of family situation, including the relationship of the parent to the child and the birth order of the child, also be controlled and analyzed. While previous studies, including the present study, have integrated the information from different family types, a separate analysis based upon family type to determine whether different interparental or child-parent agreement patterns exist may also be of interest.

Exploration is also necessary to determine the nature of the discrepancy between the reports of parents and children. Specifically, it is necessary to discover the accuracy of the various reports obtained from multiple informants given the discrepancy. One possible method to accomplish this would be to use an independent external measure of child behavior, such as a documented clinical diagnosis. An analysis of child-parent agreement on such a group could be conducted to determine whether significant discrepancies exist. If discovered, the external measure would

serve as an independent criterion through which the accuracy of each informant report may be evaluated.

Finally, many questions arose regarding results which did not seem to support relationships previously reported in the literature. Because the use of a non-clinical sample in the present study makes comparisons with previously published studies in this area difficult due to their reliance on clinical samples, replication of this study using a clinical sample is necessary. Such a study, if it includes a full analysis, will allow comparisons to be made with previous research.

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Appendix A

Recruitment form for study on interparental and child-parent agreement.

Recruitment Form

Title of Research Project:	Interparental and Child-Parent Agreement on Children's Behaviors.
Conducted by:	Cory Saunders, B.Sc. Department of Psychology University Of Windsor Phone: (519) 253-4232 ext. 2217
Supervised by:	Sylvia Voelker, Ph.D. Phone: (519) 253-4232 ext. 2249

When troubled children and adolescents seek help, psychologists sometimes use questionnaires to determine what type of services are needed. This project will examine the usefulness of two new questionnaires, one designed for completion by the parent, and the other to be completed by the child or adolescent. The purpose of this study is to examine whether parents and their children describe the child's behavior in similar ways. This project is in partial fulfilment of a Master's degree at the University of Windsor, Department of Psychology. This study is being conducted with parents at the university as well as with parents in the community.

In order for your family to participate in this project you must be the parent of a child between the ages of 10 and 14, inclusive. Your participation in the project will require that you, your spouse and your child each complete a questionnaire of true-false items. Your participation will involve approximately 1 to 1 1/2 hours of your time.

If you wish to receive more information on this project, or if you wish to participate, please complete and return this form so that you may be contacted. If you prefer, you may contact the Principal Investigator (Cory Saunders) regarding participation or questions you may have. Please note that completion of this form does not commit you to participation in this project.

Name (please print)	Date
Daytime phone number	Evening phone number

Appendix B

Informed consent form for research participants.

Informed Consent Form

Interparental and Child-Parent Agreement on Children's Behaviors

Purpose:

When troubled children and adolescents seek help, psychologists may use questionnaires to help determine what type of services are needed. This project will examine the usefulness of two new questionnaires, one designed for completion by the parent, and the other to be completed by the child or adolescent. The purpose of the study is to examine whether mothers and fathers and their children describe the child's emotional and behavioral functioning in similar ways. Participation in this study does not imply that the participating families are maladjusted in any way. This project is in partial fulfilment of a Master's degree at the University of Windsor, Department of Psychology.

Procedure:

This project will require you to answer a set of true-false questions and will take approximately 1 to 1 1/2 hours to complete. Your responses will be kept strictly confidential. Your name or any other form of identifying information will not be placed on any of the materials except for this consent form, which will be kept separate from all other materials. A code will be used to link family members' responses together for the purpose of comparison (for example 000M, 000F, 000C) but no link will be made to your identity.

This project will provide a great deal of information about whether or not parents and children agree about the child's functioning. While participants may not receive direct benefit from participation (except course credit for university students, as specified by course instructors), the knowledge gained can improve mental health services provided to families. Participation in this project presents minimal risk. Your participation in this project is completely voluntary and you may withdraw from the project at any time, without explanation or penalty.

I will be available after the session to discuss questions or concerns regarding your participation in this project.

Feedback:

If you would like to receive a copy of the study results, please contact the Principal Investigator (Cory Saunders) after the study has been completed. Individual feedback on the forms that you fill out will not be shared with you because the instruments being tested are still being developed and the results may be misleading.

This research has been reviewed by the Ethics Committee of the Psychology Department at the University of Windsor. Any ethical concerns about the study may be addressed to that committee (Ethics Committee Chair: Dr. Sylvia Voelker, 253-4232 ext. 2249).

If you have any other questions or concerns about the study, please contact either myself, or my advisor, Dr. Sylvia Voelker.

Sylvia Voelker, Ph.D.
University of Windsor
Department of Psychology
253-4232 ext. 2249

Cory Saunders, B.Sc.
University of Windsor
Department of Psychology
253-4232 ext. 2217

Consent Form

Parent:
I, _____ (name, please print), **have read this consent form and agree for myself and my son/daughter to participate in this project.**

Signature _____ Date _____

Parent:
I, _____ (name, please print), **have read this consent form and agree for myself and my son/daughter to participate in this project.**

Signature _____ Date _____

Child/Adolescent:
I, _____ (name, please print), **have read this consent form and agree to participate in this project.**

Signature _____ Date _____

Signature _____ Date _____
Principal Investigator (Witness)

Due to the fact that these instruments are in the experimental phase, the test publisher, Western Psychological Services, is interested in collecting data as well and has requested that I collect from your child's/adolescent's teacher a brief rating scale describing your child's/adolescent's behavior at school. I request that you complete the following section, thereby permitting me to contact your child's/adolescent's teacher to obtain this information.

I, _____ (name, please print), **consent to my child's/adolescent's teacher** _____ (name, please print), **of** _____(name of school), **being contacted for the purpose of completing a brief rating scale of my child's/adolescent's behavior.**

Signature _____ Date _____

Attached you will find a copy of the letter that will be sent to teachers along with the rating scale, detailing your participation in this study.

Teacher Notification

Re: Participation in research project.

_____,

I am currently conducting a research project on comparison of child behavior reports from multiple informants, in partial fulfilment of a Master's degree at the University of Windsor, Department of Psychology. The family of one of your students, _____, has participated in this project and have consented to my contacting you for the purpose of completing a brief rating scale of their child's behavior.

Please note that participation in this study does not imply that the participating families or children are maladjusted in any way. If you have any other questions or concerns about the study, please contact me. Thank you for your cooperation.

Cory Saunders, B.Sc.
University of Windsor
Department of Psychology
253-4232 ext. 2217

Sincerely,

_____
Cory Saunders, B.Sc.

Appendix C

Demographic information form

Demographic Information

Please complete the following questions to provide us with some general information about the participants of this study.

Choose the item that you feel best describes your ethnic background (e.g., Caucasian, Black, Hispanic, Asian, Native/Aboriginal, Inuit, or Other):

Mother: _____ Father: _____

Choose the item that you feel best describes your relation to your child (Biological parent, Step-parent, Adoptive parent, Legal guardian, or Other):

Mother: _____ Father: _____

Check the item that you feel best describes your level of education:

	Mother	Father
Some highschool	_____	_____
University diploma	_____	_____
Completed highschool	_____	_____
Bachelor's degree	_____	_____
Technical school diploma	_____	_____
Master's degree	_____	_____
Some university	_____	_____
Doctoral degree	_____	_____

What is your current occupation:

Mother: _____ Father: _____

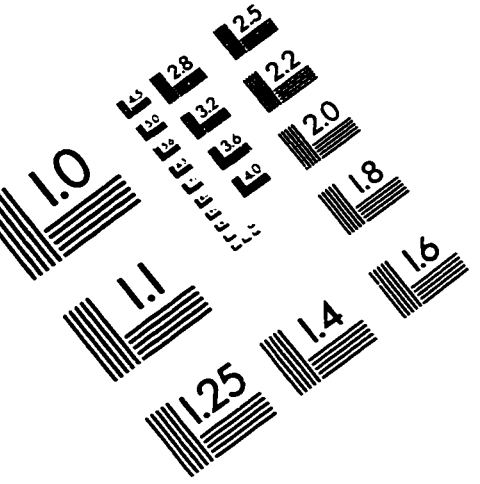
What is your approximate annual income:

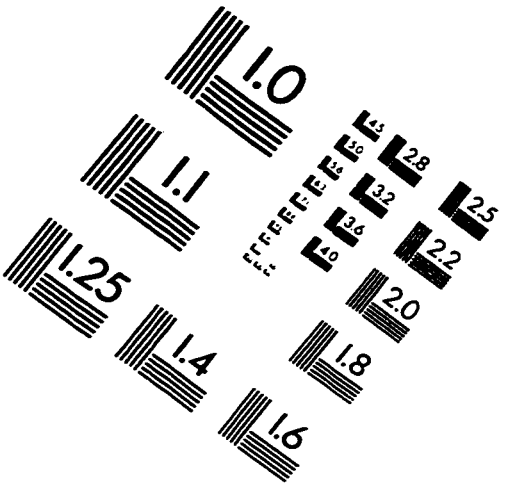
Mother: _____ Father: _____

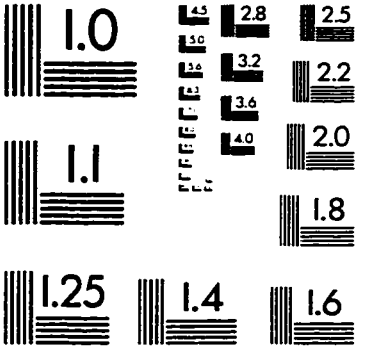
Vita Auctoris

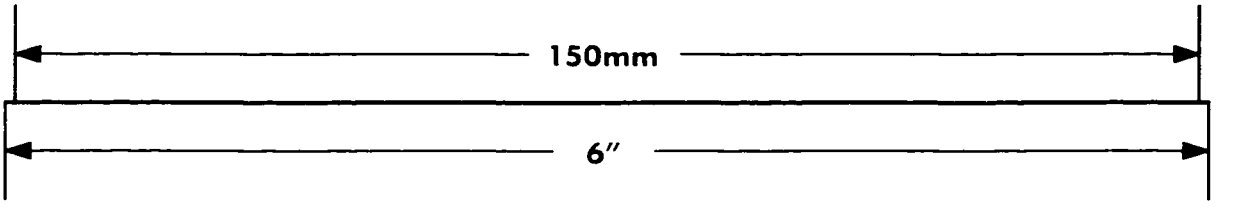
Cory Saunders was born on December 19, 1971, in Gander, Newfoundland. In 1989 he graduated with honors from Pasadena Academy. He received a B.Sc. in psychology and a post-baccalaureate diploma in Behavior Modification with Problem Children from Memorial University of Newfoundland in 1993. In 1994 he graduated with a honors B.Sc. in psychology. Since 1994, he has been enrolled in the doctoral programme in child clinical psychology at the University of Windsor.

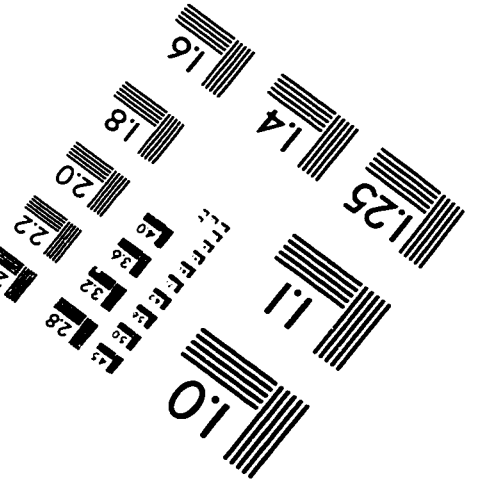
IMAGE EVALUATION
TEST TARGET (QA-3)

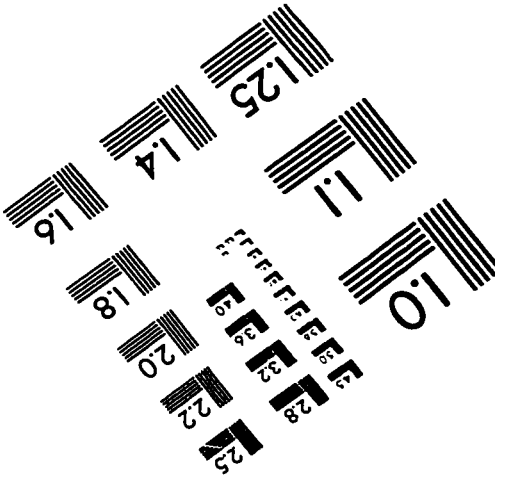












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